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could think of nothing but the well known picture called 'The Tight Shell,' which one sees advertised in the sporting journals. The bird is perhaps still at large, and the shells, which finally did go in, were rapidly discharged at the empty air, making a fitting climax to a short but vigorous series of atmospheric disturbances that had preceded them.

Washington, D. C.

Midwinter Birds on the Mojave Desert

BY JOSEPH MAILLIARD AND JOSEPH GRINNELL

THE midwinter collecting trip of 1903-04 had been so pleasantly participated in by the authors of this article that it was proposed to repeat the experience the following year, with the difference of a change of base, and the addition of a student assistant for each of us. After thinking over various localities it was decided that Victorville, near the southern edge of the Mojave Desert would probably prove an interesting point, and one at which but little work had ever been done. This locality was near enough to the bases of the San Bernardino and San Gabriel Ranges so that mountain birds should be found during stormy weather dispersed at the lower levels along with northern visitants and the resident desert species.

Victorville is a small settlement on the line of the A. T. & S. F. railroad between Barstow and San Bernardino, thirty-seven miles south of the former. The Mojave River runs past the place, cutting through some picturesque rocks just above the town, and finally loses itself in the desert sands below Barstow. Its source is in the wood-covered San Bernardino Mountains to the south, and along its banks are groves of cottonwoods, many of these trees being of large size and the groves quite extensive in places. On each side of the river the desert stretches away in a varied assortment of plains, rolling hills, and bare rocky mountains. The usual desert bushes are but thinly scattered over its surface, affording little cover for the permanently resident birds; and while the tree yuccas are in evidence, chiefly towards the south, they are much less numerous than we had hoped to find them.

The party consisted of the authors and three students from the Throop Polytechnic Institute of Pasadena. One of these, Philip Pinger, was Mr. Mailliard's assistant; another, Joseph Dixon, Mr. Grinnell's; while the third, Walter P. Taylor, ornithologized on his own account. Owing to the scarcity of cover in the desert proper, birds proved very scarce there, and we soon found that most of our collecting would have to be done among the cottonwoods along the river, and about the large alfalfa field two miles north of town. A small irrigating ditch from the river above ran through this field, with seepage-sinks here and there containing reeds and willows, and we discovered that these were the abiding places of numerous song sparrows, which, when disturbed or when feeding, scattered out to weed patches in the vicinity. These birds had evidently come from many parts of the west, so that this locality seemed to serve as a sort of winter meeting place for them. We captured what looked to be quite a variety, but which finally worked down to three races, with intermediate examples, as shown in the annotated list to follow.

Another large alfalfa field on the other side of town and beyond the deep gorge through which the river ran, was a most promising looking spot, containing as it did, an attractive laguna. But we were very positively informed that "no shooting allowed" was to be carried out to the letter of the signs displayed, and while the calaboose in the town was not a formidable looking place, we concluded it safest to give up our inclinations in that direction.

This part of the Mojave Desert is about 2700 feet above the sea, and, unlike the California portion of the Colorado Desert, where we had found the weather so moderate the previous winter, has a variable and somewhat wintry climate. Though rain in any quantity but seldom falls, the wind makes itself felt with a fierce energy that is truly exasperating. During our stay from December 21, 1904, to January 2, 1905, inclusive, we had two days with slight rain, many with heavy wind, some of them cloudy and exceedingly chilly, several nights of severe frost when water froze in the kitchen of our cottage, and only two days when warm sunshine and clear air gave us a taste of the sort of weather we would have most desired for comfort and collecting. Some days we would have to keep almost on the run, even in bright sunshine until as late as ten o'clock in the morning to keep warm, and then with hands too cold to handle guns or specimens properly. Doubtless our light clothing, and the fact that we had been long accustomed to the more equable California coast climate, rendered us particularly sensitive to this cold, which in the eastern states might have been deemed moderate for the season.

Some days we would find almost nothing in the bird line, though possibly picking up something unexpected on the way back to headquarters, while on others we would make a good haul. Whether this was due only to the weather, which did not always seem to be the case—as when a fine day would be barren of results—or whether the birds were moving up and down the river, if not actually migrating, we could not determine. But certainly our daily "horizons" were astonishingly uneven, and in such a way that the weather could hardly be called to account for the difference.

We had expected to find cactus wrens, sage thrashers, and the different desert sparrows at least fairly abundant in this locality, with the Texas woodpecker relatively numerous, to say nothing of visions of Leconte thrashers; but in all this we were more or less disappointed. Mesquites and the different forms of cactus were almost entirely wanting, the tree yuccas were widely scattered, while the sage and creosote bushes were lamentably thin. In consequence most of our work in the desert proper brought scant returns, rock wrens, a very few cactus wrens, some sage, and intermediate sparrows being almost the only inhabitants, though we were afforded an occasional tantalizing glimpse of a Leconte thrasher.

The cottonwoods along the river, on the other hand, abounded in heavy growths of mistletoe, the berries of which seemed extremely attractive to the majority of the visiting birds. Of these the western bluebird was most in evidence, sometimes widely dispersed in small groups feeding in the mistletoe clumps, and at other times collected in large flocks among the tops of the trees. The mountain bluebird was occasionally met with out in the open, but never in the woods. Some phainopeplas and a few Townsend soletaires seemed highly appreciative of the flavor of the mistletoe berries, while at intervals a flock of cedar-birds would be encountered eagerly devouring the transparent little fruit. The capture of a Bohemian waxwing by Pinger led us to hope that we would find more of these rare birds, but the hope was not verified and the specimen remained unique. Rocky Mountain creepers were now and then discovered busily engaged in their detective

work among the crevices of the cottonwood bark, but they were seldom seen, their faint notes being the principal evidence of their presence. Mountain chickadees, which one naturally associates with mountains and coniferous trees, were quite numerous, their cheery song being heard even under the most unfavorable weather conditions. An active company was frequently encountered among the cottonwoods busily engaged in their usual business of hunting up food, their utter fearlessness showing in strong contrast to the timidity of many of the other species.

Intermediate sparrows and Sierra juncos were very numerous in places along the railroad, the former as usual making it exasperating work for the collector to single out and pursue any other species in their vicinity. The intermediates were

sure to scatter in all directions and mix up with anything else that happened to be near them. The juncos, too, were somewhat disturbing for the reason that we always felt there might be some unsuspected subspecies among them; and yet we were always loth to destroy

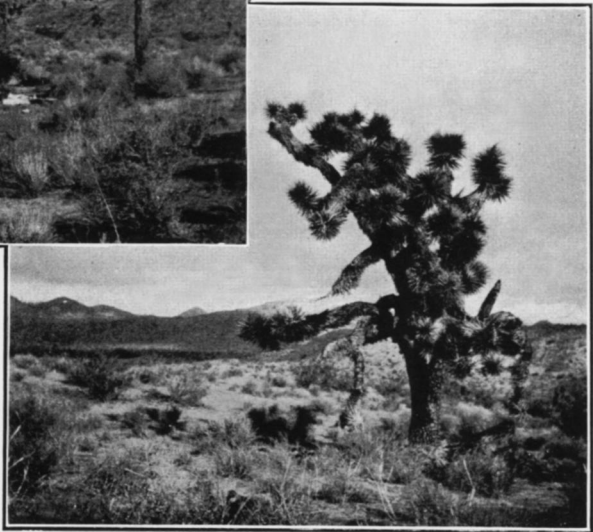


TREE YUCCAS, SHOWING THINNESS
OF DESERT BRUSH

more than seemed necessary to establish the identity of the majority. However, it was our good fortune to capture a few specimens of the slate-colored junco. The records of this eastern race have become so numerous

for southern California, that we must begin to consider it a regular winter visitant, rather than a casual or "accidental" one. The taking of two orange-crowned warblers leads to similar views. It is scarcely possible that we came across every individual in the vicinity during our short stay, but on the contrary it is reasonable to assume that we saw but a small proportion of the total number of these birds so seldom met with in California, and that thorough investigation would show them to be fairly common in this part of the State.

The capture of three horned owls was a great piece of good fortune, but we were disappointed in not finding any screech or pigmy owls in this locality, though of course any bird taken here in midwinter might have come down the river from



the mountains instead of being bona fide residents. The horned owls, however, most evidently belong in the desert, as hereinafter noted.

When we first arrived in Victorville we naturally enquired if there were many birds about the neighborhood. As is often the case we were assured that there were very few, possibly half a dozen kinds! We actually noted 72 varieties, as the following list shows.

Anas boschas. Mallard. *Mareca americana*. Baldpate. *Nettion carolinense*. Green-winged Teal.

Ducks were rather common along the Mojave River. The above three species were represented among those shot in the immediate vicinity of Victorville during our visit, either by ourselves or by local sportsmen.

Fulica americana. American Coot. Numerous about lagoons in the river bottom.

Gallinago delicata. Wilson Snipe. Snipe were present in small numbers along the river, according to local hunters. Specimens secured during our stay were examined by us.

Oxyechus vociferus. Killdeer. Few along the river.

Lophortyx californicus vallicolus. Valley Quail. One flock of quail was discovered in the river bottom a mile or so below Victorville. The birds obtained were of the above species, which has doubtless penetrated this far into the desert from the southward by the way of the Mojave River. The desert quail was not detected here, but we were told of its occurrence on the desert twenty miles to the eastward.

Accipiter velox. Sharp-shinned Hawk. Two were shot and others seen among the cottonwoods of the river bottom. One of those secured was in the act of slaughtering a Townsend solitaire.

Accipiter cooperi. Cooper Hawk. Several were seen in the river bottom.

Buteo borealis calurus. Western Red-tail. Fairly common along the cottonwoods.

Falco mexicanus. Prairie Falcon. Two were seen flying over the desert.

Falco sparverius. American Sparrow Hawk. Common. Noted among the tree-yuccas far out on the desert as well as along the river bottom.

Strix pratincola. American Barn Owl. Several were noted in the vicinity of the alfalfa patch in the river bottom below Victorville. At dusk the owls emerged from the cottonwoods and began beating back and fourth over the fields on the hunt for meadow-mice. One bird was seen to plunge abruptly into the grass, and so intent was it upon its capture, that it was very closely approached. There was every evidence that the owl had thrust its foot and leg far down a burrow in pursuit of the fleeing mouse.

Nyctalops wilsonianus. American Long-eared Owl. Two were obtained at the alfalfa patch. Their stomachs were full of the remains of meadow-mice (*Microtus californicus*) and kangaroo rats (*Dipodomys merriami*.)

Asio magellanicus pallescens. Pallid Horned Owl. Horned owls were actually plentiful along the river bottom where they evidently obtained a ready livelihood. The stomachs of those secured were crammed with the remains of meadow-mice. The three specimens captured agree in characters which distinguish them from the race *pacificus* of the coast region of southern California. They are remarkably pale throughout, the feet and legs dorsally being totally unbarred, and white predominates over the dark markings on most of the under surface. They measure as follows:

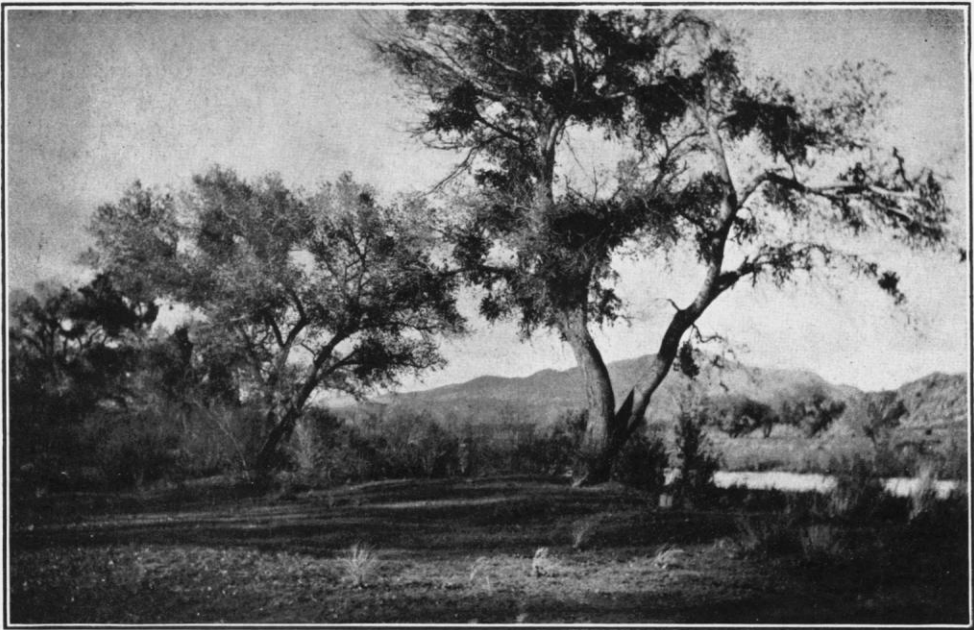
			wing	tail	tarsus
No. 6151	♂	Coll. J. & J. W. M.	13.65	8.75	2.46
No. 6150	♀	" " " " " "	13.98	8.83	2.50
No. 6165	♀	" " " " " "	13.23	8.87	2.72

Geococcyx californianus. Road-runner. One was taken and another one or two seen.

Ceryle alcyon. Belted Kingfisher. One was seen flying along the river.

Dryobates villosus hyloscopus. Cabanis Woodpecker. Moderately common among the cottonwoods.

Dryobates scalaris bairdi. Texas Woodpecker. Not numerous, though found among the tree-yuccas out on the desert as well as in the cottonwoods. Holes found in tree-yuccas were thought to belong to this species. Two skins secured are indistinguishable from Arizona examples. But another (♂, No. 6191 Coll. J.



COTTONWOODS WITH HEAVY GROWTH OF MISTLETOE

& J. W. M.), taken Dec. 26, exhibits such a combination of characters that it may reasonably be considered a hybrid between *bairdi* and *nutalli*. It seems quite likely that cross-breeding occurs along the edge of the desert south of Hesperia, where the tree-yuccas extend to the very base of the San Bernardino Mountains, so that the habitats of *bairdi* and *nutalli* adjoin each other with no hiatus intervening.

Dryobates nuttalli. Nuttall Woodpecker. A single specimen taken in the cottonwoods (♀, No. 6162 Coll. J. & J. W. M.) Dec. 26, is quite typical of this species. It was probably a straggling visitant from the southward, following the cottonwood-lined Mojave River down from the San Bernardino Mountains.

Colaptes cafer collaris. Red shafted Flicker. Common along the river-bottom. A "hybrid," with decided *auratus* tendencies was secured.

Sayornis saya. Say Phoebe. A few noted in the river-bottom, and one out on the desert.

Sayornis nigricans. Black Phoebe. A very few observed along the river.

Otocoris alpestris ammophila. Mojave Horned Lark. But few horned larks were seen, and these eluded our pursuit. No specimens were secured, but it seems highly probable that they belonged to the Mojave Desert race.

Corvus corax sinuatus. American Raven. Presumably this species. Common in the vicinity, but wary as usual. They refused to be shot, or even trapped!

Xanthocephalus xanthocephalus. Yellow-headed Blackbird. One lone individual was seen by Mailliard in the river bottom.

Sturnella neglecta. Western Meadowlark. Several meadowlarks frequented the alfalfa patch and pastures below Victorville.

Euphagus cyanocephalus. Brewer Blackbird. Large flocks remained close about town or visited the cattle pastures nearby.

Carpodacus mexicanus frontalis. House Finch. Not at all numerous; in fact, met with only on a few occasions about cultivated tracts in the river bottom.

Astragalinus psaltria hesperophilus. Green-backed Goldfinch. A very few noted in the river bottom.

Astragalinus tristis salicamans. Willow Goldfinch. Small companies were often met with feeding in weed patches near the river.

Spinus pinus. Pine Siskin. One specimen was secured from a small flock feeding in a weed patch.

Passerculus sandwichensis alaudinus. Western Savanna Sparrow. Abundant in the alfalfa patch and adjacent fields.

Chondestes grammacus strigatus. Western Lark Sparrow. A scattering flock was regularly observed in the neighborhood of the alfalfa patch, generally in company with juncos.

Zonotrichia leucophrys gambeli. Intermediate Sparrow. Very common in the brush all along the river. Sometimes met with in "sage" bushes far out on the desert.

Spizella socialis arizonæ. Western Chipping Sparrow. Small numbers were detected with flocks of juncos in the river bottom.

Junco hyemalis. Slate-colored Junco. Three specimens were taken and at least three others were seen. The captures may be recorded as follows: ♀, No. 6243 Coll. J. G., Dec. 30; ♂, No. 6146 Coll. J. & J. W. M., Dec. 24; ♂, No. 6259 Coll. J. & J. W. M., Dec. 31. All were in company with individuals of *thurberi*.

Junco hyemalis thurberi. Sierra Junco. Very numerous in flocks or small companies all through the bottom lands near the river. Among the considerable series secured, none seem referable to any other of the western races.

Amphispiza belli nevadensis. Nevada Sage Sparrow.

Amphispiza belli canescens. California Sage Sparrow.

Sage Sparrows were fairly common out on the desert, and on sage flats nearer the river. Out of eighteen specimens brought home, nine are referable to *nevadensis* and nine to *canescens*. The smaller size of the latter, with slightly darker coloration, is the diagnostic feature. *Canescens* evidently reaches this vicinity by a short journey from the southern Sierras to the westward; while *nevadensis* must come by a much longer route from almost due north. The latter is not known to breed south of about 36° Lat., and entirely east of the Sierra Nevada.

Melospiza cinerea montana. Mountain Song Sparrow.

Melospiza cinerea merrilli. Merrill Song Sparrow.

Melospiza cinerea cooperi. San Diego Song Sparrow.

Out of forty-nine song sparrows collected by the party twenty-seven are referable to *montana*, two to *merrilli*, and twenty to *cooperi*. Among those referred to *montana*

are several not typical as compared with Colorado examples. These show in varying degree an approach toward *merrilli*, and doubtless came from the north-western part of the Great Basin region, where the breeding ranges of *montana* and *merrilli* merge. The *cooperi* individuals doubtless invaded northward along the Mojave River from the San Diegan district. If any song sparrow at all breeds along the Mojave River it is surely *cooperi*.

Melospiza lincolni striata. Forbush Sparrow. A large specimen (♂, No. 6267 Coll. J. & J. W. M.) shot by Pinger, Jan. 1, was the only one found. It presents the characters of of typical *striata*, the breeding grounds of which is in the Sitkan district of southeastern Alaska.

Ampelis garrulus. Bohemian Waxwing. A single male specimen of this circum-boreal species was shot by Pinger in the afternoon of Dec. 31, and is now No. 6258, Coll. J. & J. W. M. The bird was alone, feeding on mistletoe berries in a cottonwood near the railroad station. A storm had prevailed during the previous night and forenoon, and the distant mountains were whitened with snow. The only other known instance of the occurrence of the Bohemian waxwing in the southwest was just forty-four years ago, when Dr. Cooper obtained a specimen near Fort Mojave on the Arizona side of the Colorado River. "It appeared on January 10th [1871], after a stormy period which had whitened the tops of the mountains with snow, and was alone feeding on the berries of the mistletoe, when I shot it." (Orn. Cal. I, 1870, 128.) Note the coincidence of circumstances! As a bird of California the Bohemian waxwing has been previously recorded only from Plumas and Lassen counties in the northeastern corner of the State. It may also be worthy of remark that the present record is apparently the southernmost ($34\frac{1}{2}^{\circ}$) for North America, and even for the world!

Ampelis cedrorum. Cedar waxwing. Several small flocks were encountered among the cottonwoods, where the birds were feeding on mistletoe berries.

Phainopepla nitens. Phainopepla. Fairly common among the cottonwoods, feeding on mistletoe berries.

Lanius ludovicianus gambeli. California Shrike. Shrikes were not at all common. Individuals were noted far out on the desert, and an occasional one on the telegraph wires along the railroad. The two specimens secured have smallish bills, faintly brownish and dusky-vermiculated breasts, and dark tints generally. They thus seem most nearly referable to *gambeli*, being probably visitants to this locality from a northwesterly direction.

(To be concluded.)

Summer Birds of the Papago Indian Reservation and of the Santa Rita Mountains, Arizona

BY HARRY S. SWARTH

(Concluded from page 50)

BIRDS SEEN IN THE SANTA RITA MOUNTAINS

Callipepla squamata. Scaled Partridge. A few individuals, not over half a dozen adults, were seen at different times on the mesa just below the mountains. A pair with a brood of young about the size of sparrows were seen on June 26.